

(No Model.)

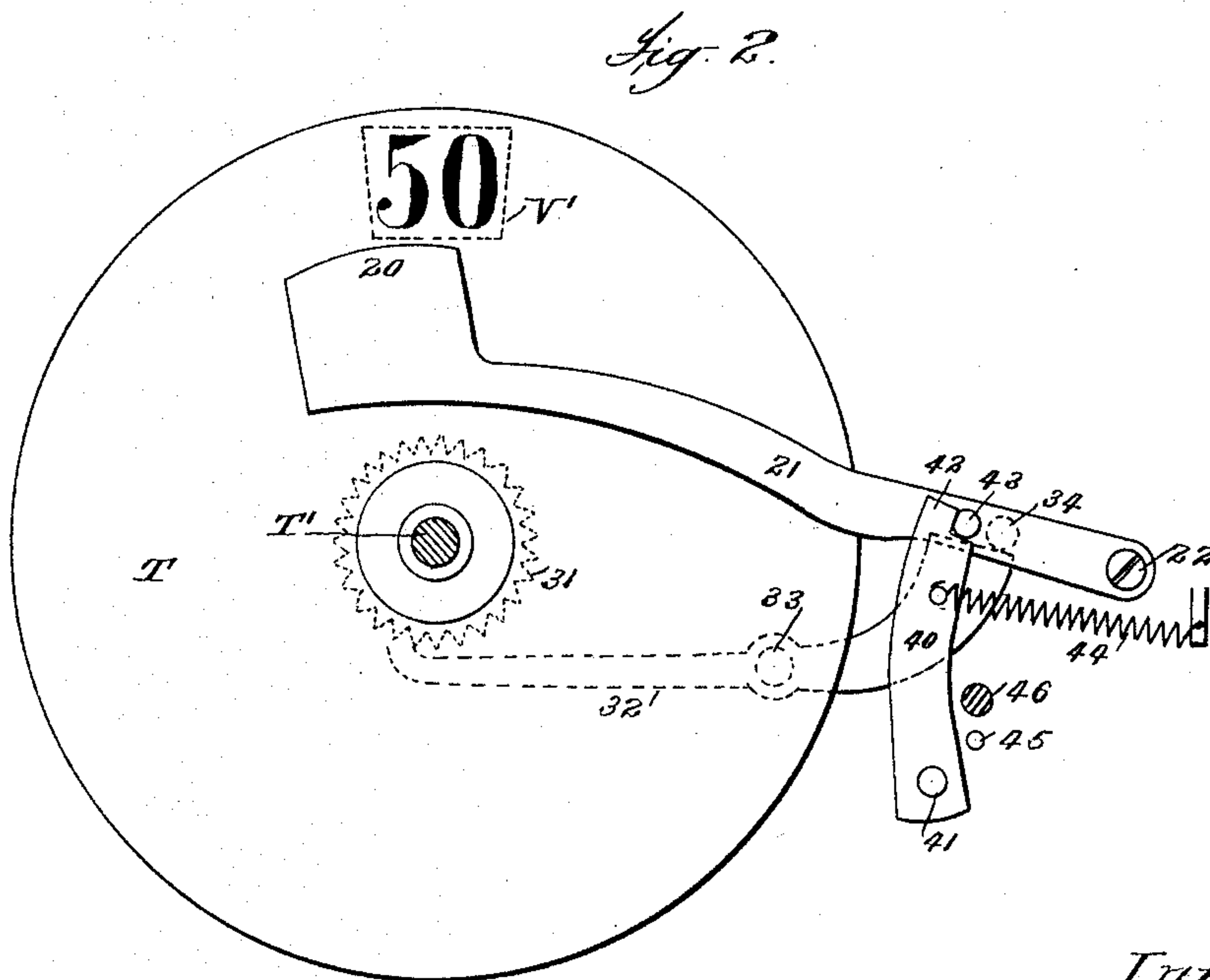
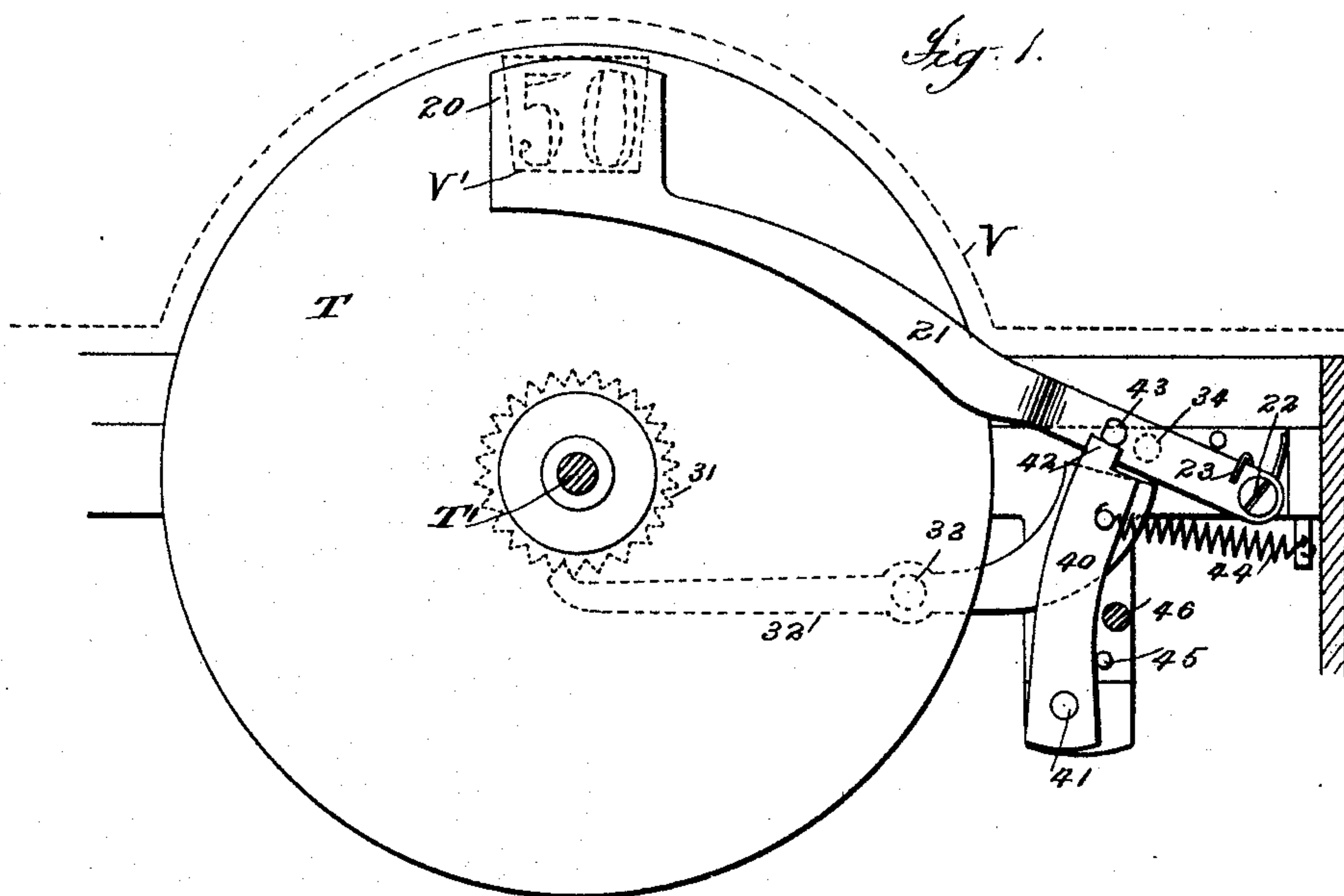
3 Sheets—Sheet 1.

L. EHRLICH.

BLIND FOR CASH REGISTERS AND INDICATORS.

No. 504,470.

Patented Sept. 5, 1893.



Attest:
Geo. H. Lott
E. W. & Anson

Inventor
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(No Model.)

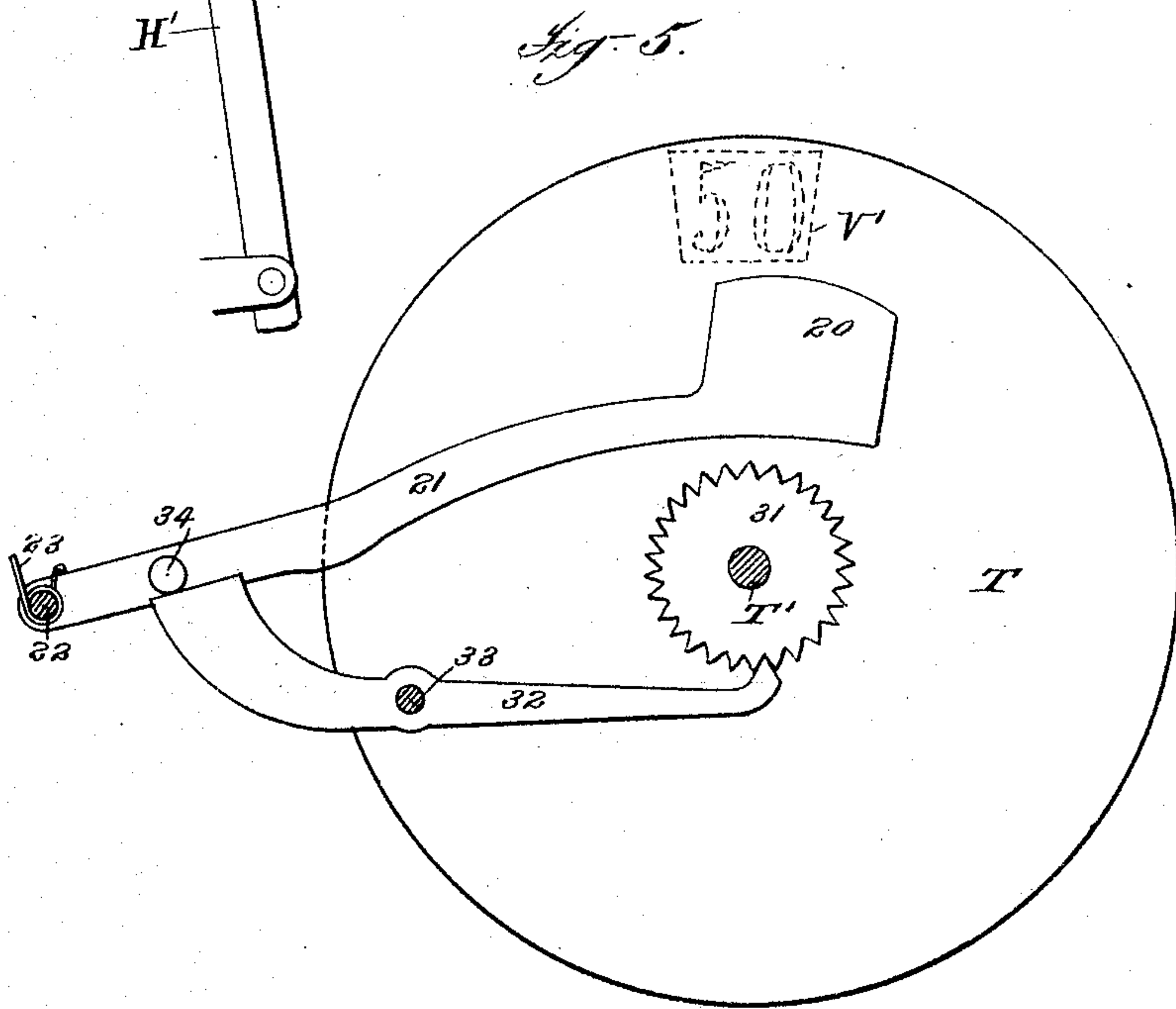
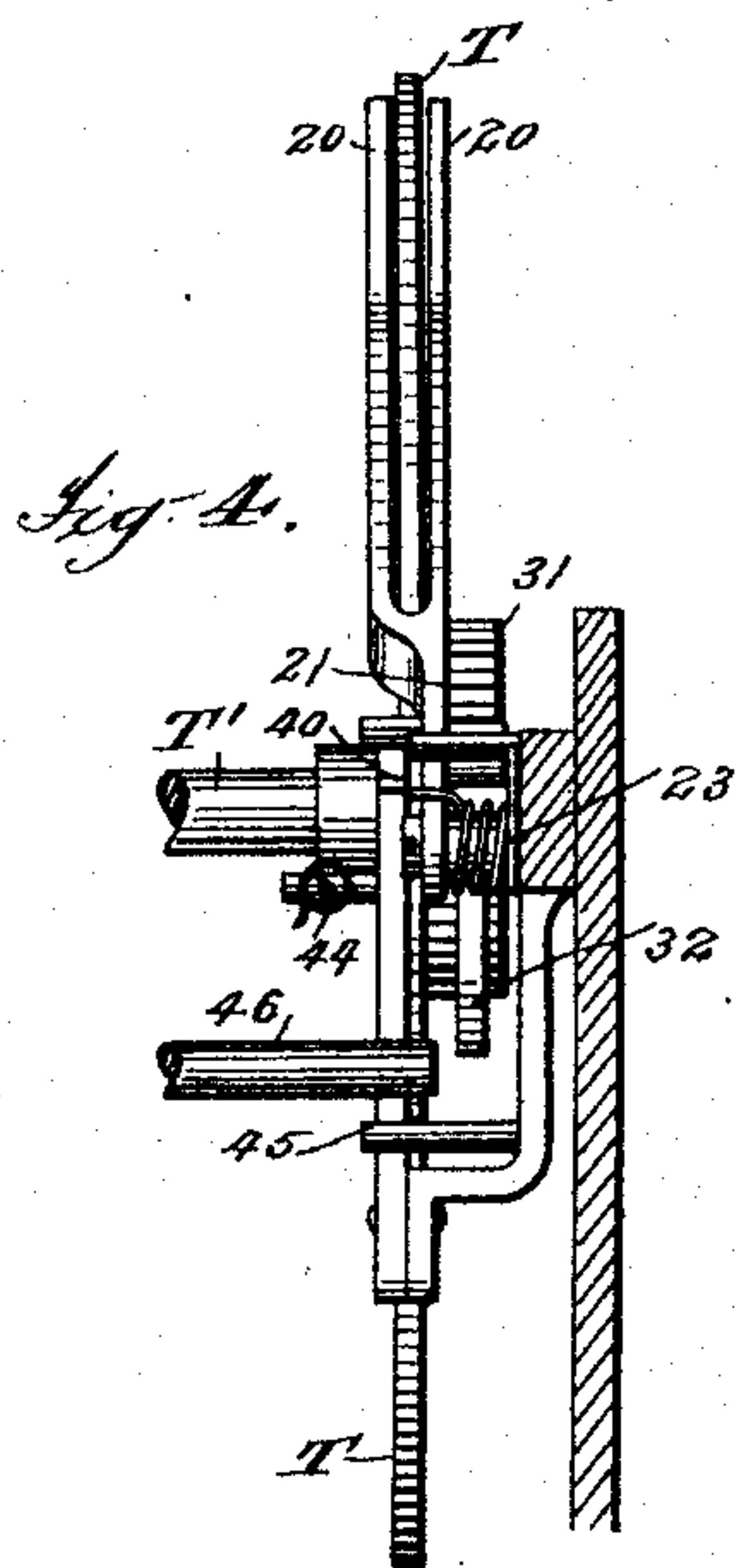
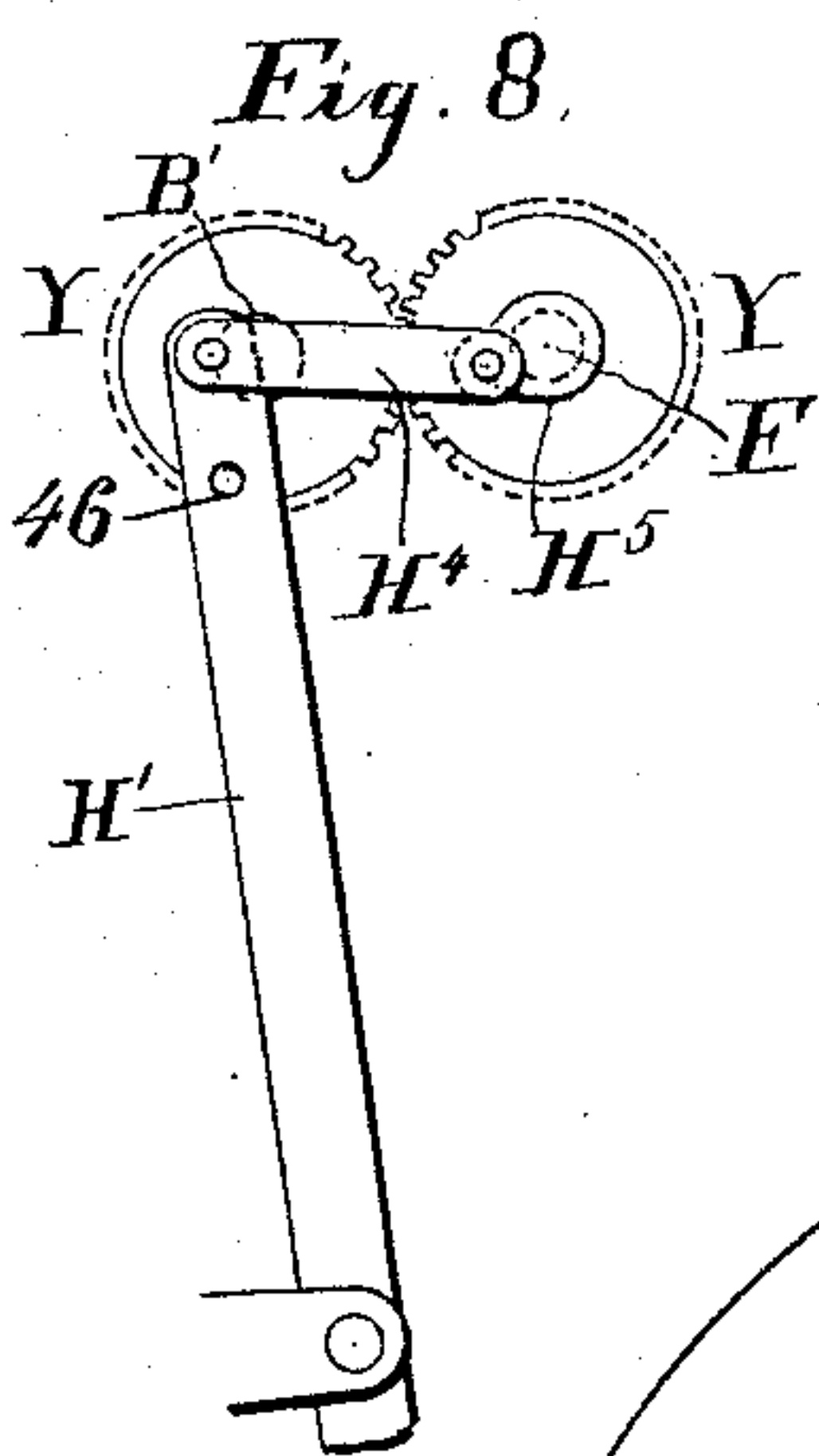
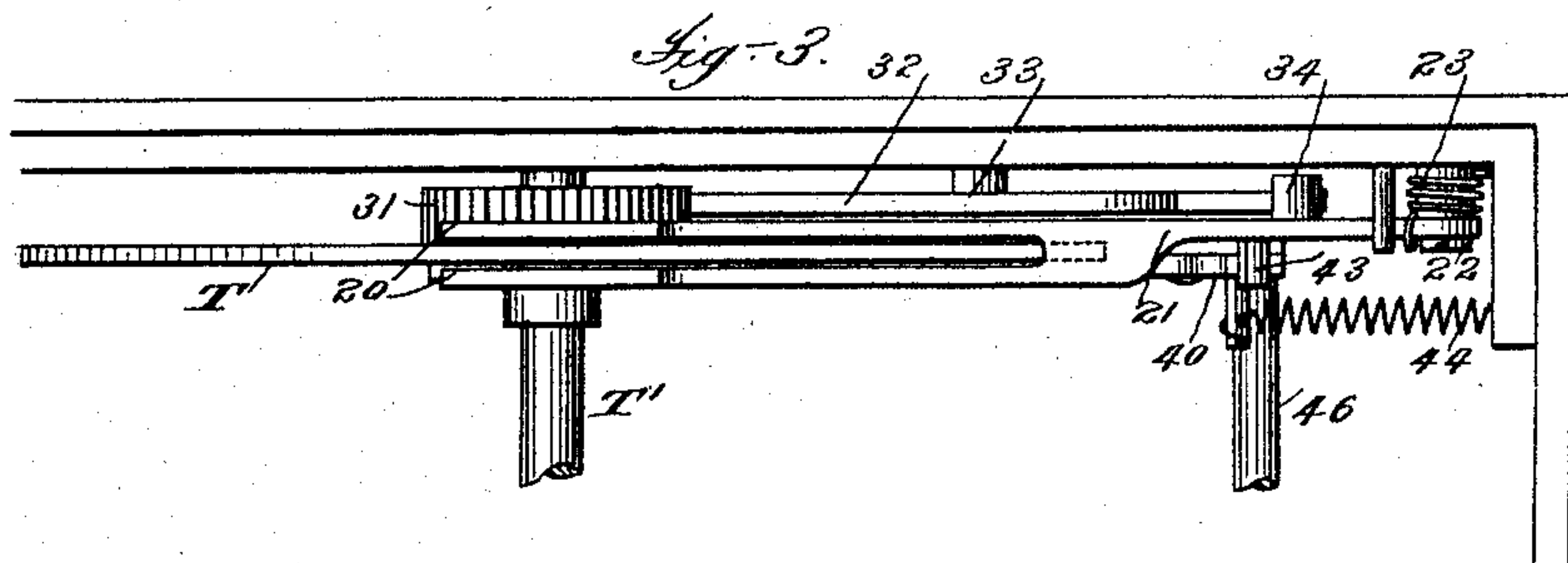
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Attest:

Geo H Bolto
Edw & A. Anderson

Inventor:

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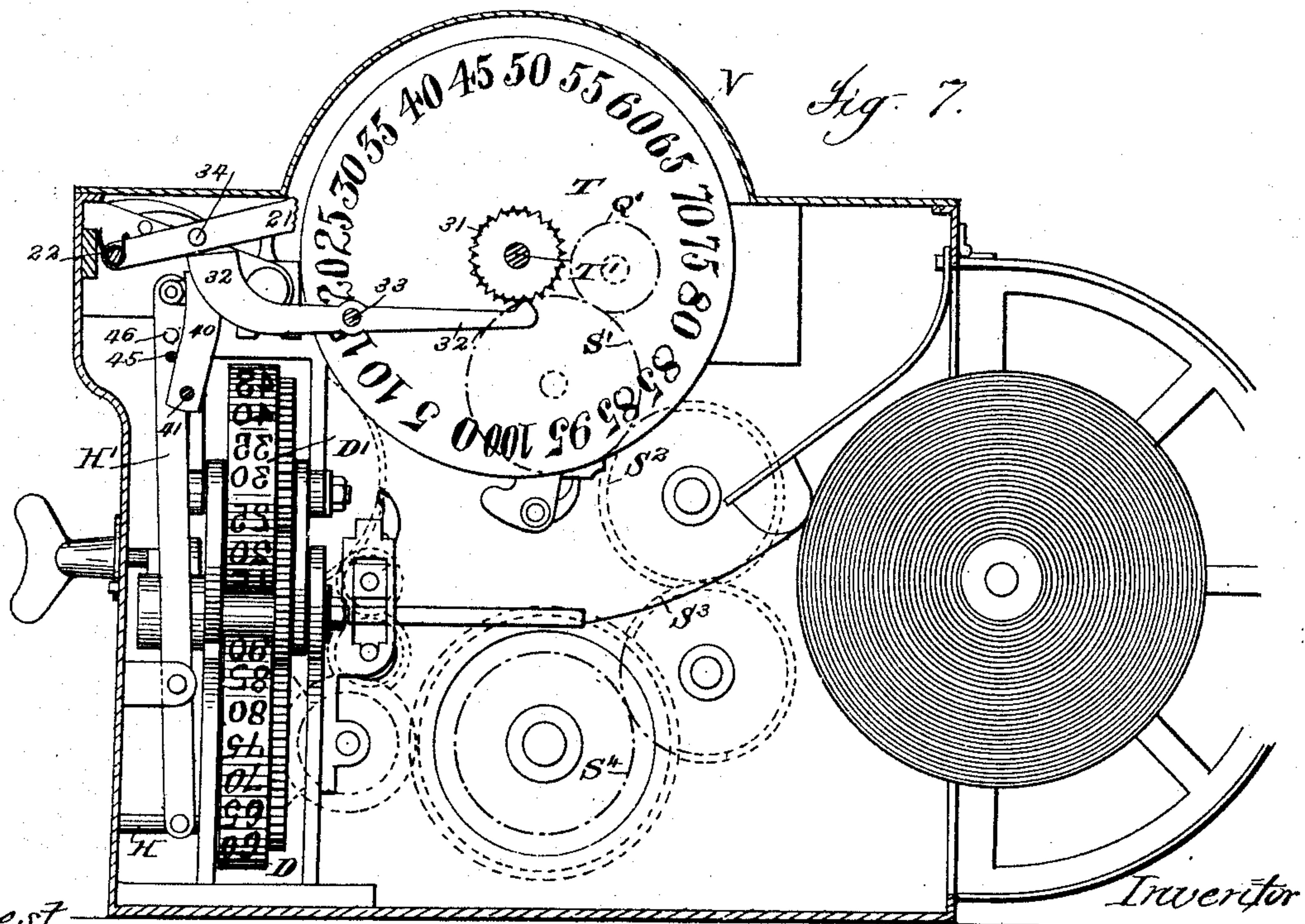
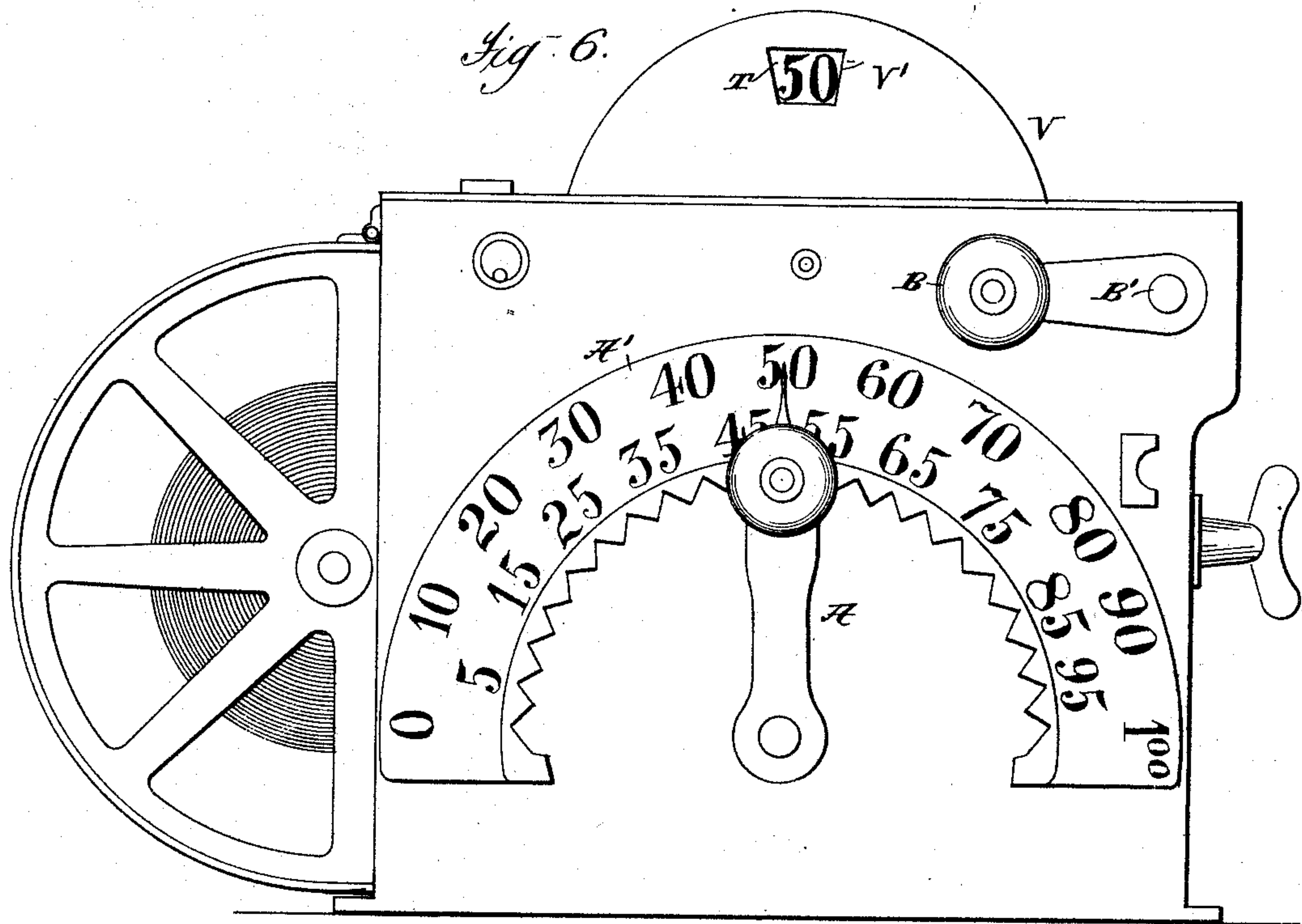
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Patented Sept. 5, 1893.



Attest
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UNITED STATES PATENT OFFICE.

LEO EHRLICH, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO.

BLIND FOR CASH REGISTERS AND INDICATORS.

SPECIFICATION forming part of Letters Patent No. 504,470, dated September 5, 1893.

Application filed August 19, 1889. Serial No. 321,257. (No model.)

To all whom it may concern:

Be it known that I, LEO EHRLICH, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cash Registers and Indicators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates more particularly to that class of cash registers and indicators which employs an indicator dial or wheel bearing a series of indicating numbers and adapted to be turned to different positions to expose different numbers singly at a window or sight opening in the casing of the machine; and my invention consists in the novel combination of an automatic screen or concealing plate with such indicator, operating to alternately hide and expose the latter at the proper time.

The means for preserving a record of the different values indicated may be either a registering device, to wit: a device in which the values indicated are added upon a series of wheels, or it may be a recording device, in which the values are printed upon a paper record-strip, or the machine may be equipped with both sets of devices. Unless specifically designated, however, I shall hereinafter employ in the specification and claims the term register and registering device to cover either or both forms of mechanism.

In many machines of this class, and in those to which my invention is more particularly adapted, the turning of the indicator to bring the proper number to the indicating point or sight opening also operates to set the registering device, and a separate handle is then operated to actuate such device to register the amount indicated. In the absence of my automatic screen it has been possible to so manipulate the machine as to cause the indicator to expose to the customer and bystanders the correct amount, but to cause the register to preserve a record of a less amount. One method of so manipulating the machine has been as follows: The clerk would stand between the machine and the customer, so as to partly hide the machine from the customer's view, and would operate the registering han-

dle with the indicator in position to exhibit a less amount than the sale, thereby sounding the alarm and opening the cash drawer with which the machine is usually provided, and he would then quickly turn the indicator until it exposed the correct amount of the sale, and then step aside or turn to the customer with his change, and the customer would see the proper amount indicated and suppose that the same amount had been registered. In so manipulating the machine the clerk could either first turn the indicator to the less amount, or if it had been left standing at a less amount at the last operation he need not turn it at all, but at once actuate the registering device, and then afterward turn the indicator to the new amount. My present invention is designed to prevent fraudulent manipulation of the machine in this and various other ways, and to that end it consists in combining with the indicator an automatic screen which moves into position to hide the indicator as soon as the latter is turned in either direction, and is moved out of such position, to expose the indicator, when the registering device is operated to register such value. After the value has been registered the number upon the indicator remains exposed to view until the indicator is turned in one direction or the other, but at its first movement the screen hides it again and it can only be exposed to view by operating the registering device.

Having thus explained the general nature and purpose of my invention, I will now proceed to describe it in detail as applied to the one form of machine illustrated in the accompanying drawings, in which--

Figure 1 represents a front view of an indicating dial combined with my automatic screen, the latter being in position to hide the indicator; Fig. 2 a corresponding view with the screen in position to expose the indicator; Fig. 3 a plan view of the parts shown in Fig. 1; Fig. 4 an end view of the right hand end of the same; Fig. 5 a rear face view of the dial and some of the parts in the position shown in Fig. 2; Fig. 6 a front elevation of the complete machine; Fig. 7 a vertical section of the same showing the interior mechanism in rear elevation; and Fig. 8 a detail

view of the trip device and actuating parts for releasing the screen.

The same letters and numerals of reference are used to indicate identical parts in all the figures.

Referring now to Figs. 1 to 5 the operation of the automatic screen may be first explained in connection with the indicator and independently of the remainder of the machine.

The indicator in this instance consists of a thin disk or dial T mounted upon a shaft T' and adapted to turn in either direction to expose its indicating numbers singly at the sight opening V' in the casing V, indicated by the dotted lines. In the present instance only one of the numbers upon the dial is shown, but it will be understood that it is provided with a series of numbers arranged in circular order around it near its edge. In this instance the dial is fast upon the shaft T' and the latter is geared to a shaft which has secured upon it a handle hereinafter referred to, by which it can be turned in either direction. Fast upon or otherwise turning with the dial is a toothed wheel 31 with which co-operates one end of a lever 32 which is pivoted to the framework at 33. The automatic screen plate 20 is carried upon one end of an arm 21 which is pivoted at its opposite end to the framework at 22. This arm has upon one side a laterally projecting stud 34 and upon its opposite side a similar stud 43, the stud 34 co-operating with one end of the lever 32 and the stud 43 with a shouldered latch arm 40 pivoted at its lower end to the framework at 41. When the screen plate is in position to expose the indicator, as in Fig. 2, the studs 34 and 43 rest upon or immediately adjacent the end of the lever 32 and the shoulder of the latch arm 40 respectively, the opposite end of the lever 32 fitting in one of the notches in the toothed wheel 31. When the dial is turned in either direction the end of the lever 32 will be forced out of the notch in which it was resting and as the adjacent tooth of the wheel 31 rides over and depresses it its opposite end will be lifted and will lift the arm 21 and carry the screen plate 20 to the position shown in Fig. 1, thereby hiding the indicator from view. When the arm 21 is lifted to this position the latch arm 40 will be pulled to the right by a spring 44 and the portion 42 of its upper end which projects above its shoulder will be carried under the stud 43 upon the arm 21 and support the arm and screen in their elevated position. A stop pin 45 limits the movement of the latch arm 40 under the action of the spring 44. The lever 32 will be vibrated as each successive tooth of the wheel 31 passes over its left hand end, but this vibration will be idle after the first tooth has passed over it, for at the passage of the first tooth it will lift the screen arm and plate to the position shown in Fig. 1 and the latch arm 40 will then support the plate and arm in that position.

From the foregoing description it will be

understood, that, with the screen plate in the position shown in Fig. 1 and the indicator exposed to view, the first movement of the indicator in either direction will lift the screen plate to the position shown in Fig. 1, and it will be held in such position by the latch 40. If the latch 40 be moved to the left to the position shown in Fig. 2 the arm 21 will of course be released and drop to the position shown in Fig. 2, its movement in such direction being enforced if desired by a spring 23 coiled around the pivotal support of the arm 21. The latch arm 40 is so moved or tripped by a trip device 46. This trip device is connected with the actuating device of the register, and when such device is operated to register the amount indicated by the number upon the dial which has been brought to the indicating point (but which remains hidden by the screen) the trip 46 is moved to the left and carries the latch arm with it and releases the screen arm 21, the latter dropping to the position shown in Fig. 2 and exposing the indicator, and the stud 43 catching behind the upper end 42 of the latch, as seen in Fig. 2. In this manner when the indicator is turned at the beginning of each operation of the machine the screen plate is automatically moved into position to hide its numbers as they successively pass the sight opening, and then when it is brought to rest and the register is actuated the screen plate is automatically moved away from the sight opening to expose the indicator to view.

In some machines of this class the indicating dial is provided with numbers upon both sides, and the casing is provided with openings upon opposite sides of the indicator, so that the indication will be exposed to view at both sides of the machine. In such instance it would be necessary to provide a screen upon each side of the dial, and to that end I have in the present case shown the screen arm 21 as bifurcated and embracing the dial, Figs. 3 and 4, and carrying two screen plates 20; but this does not in any way affect the mode of operation of my invention.

In the views of the complete machine shown in Figs. 6 and 7, A refers to the operating handle by which the shaft T' and indicator dial are turned. This handle is fast upon the front end of a shaft which is geared by a train of gears S⁴ S³ S² S' T² to the shaft T'. The shaft A carries a pointer which is adapted to travel over an index plate A' upon the front side of the casing, the adjustment of the parts being such that when the pointer stands opposite a given number upon the index the corresponding number upon the indicator dial will stand opposite the sight opening V'.

The operating handle for the registering device, and in this instance for the check-printing or recording device also, is shown at B in Fig. 6 and is fast upon a rotary shaft B', the shaft and handle being given a complete revolution at each operation of the machine.

The particular machine shown in Figs. 5

and 6 is substantially the same as that patented to William Koch by Letters Patent No. 367,213, dated July 26, 1887, and now in extensive use and of familiar construction, so that any detailed description of the construction and operation of the machine will be unnecessary, it being sufficient to describe such parts of it as co-operate with my invention.

The machine is provided with a registering device Q' upon which the different values indicated are registered, and is also provided with a set of type wheels D D' by which such values are printed upon a paper strip, a suitable length of the latter to form a check being projected from the machine, with the printed number upon it, at each operation, and severed to form a detached check.

As seen in Fig. 8 the shaft B' has fast upon it a gear Y which meshes with a similar gear Y fast upon a rotary shaft F. The shaft F has fast upon it an arm H⁵ to which is pivoted the right hand end of a link H⁴ whose left hand end is pivoted to the upper end of a lever H', Figs. 7 and 8, which lever is pivoted below its middle in a bracket upon the casing or framework. Near its upper end the lever H' is provided with a laterally projecting stud 46 which in this instance constitutes the trip device for the latch 40, before referred to. At each revolution of the register-operating handle B and shaft B' the upper end of the lever H' will be vibrated laterally back and forth and at its limit of movement toward the right the stud 46 will engage the latch 40 and so move it as to release the arm 21 and permit the latter and the screen plate 20 to drop to the position shown in Fig. 2, as heretofore described. The adjustment of the parts is preferably such that the latch 40 will be tripped for this purpose just before the handle B and shaft B' complete their movement.

Without further description of the registering and printing devices it may be stated generally that the indicator is so geared to the type-wheels that when the indicator is turned to bring a given number to the indicating point the type-wheels are turned to bring the corresponding number to the printing point, and that the operation of the handle B then actuates a suitable platen to print such numbers upon the paper strip. So, too, the movement of the indicator sets a guard for the actuating pawl of the registering device, and the operation of the handle B then actuates such pawl to cause it to turn the registering device the proper distance to add upon it the amount indicated; all as fully set forth in the patent above referred to. It will therefore be seen that in the present instance my automatic screen is so combined with the machine to which I have shown it applied that when the indicator is turned in either direction to change the indication the screen plate is moved into position to hide the indicator and is automatically engaged by the

latch and held in such position; and that when the actuating handle of the registering and printing device is operated the latch is tripped and the screen released and automatically moved away from the indicating point, to expose the indicator to view. My invention in its broader scope, however, is not restricted to this precise mode of operation. For instance, the operation may be reversed and the movement of the screen plate and the co-operation of the latch with it be such that when the indicator is turned the latch will be tripped and the screen be moved by a spring or by gravity into position to hide the indicator and then when the actuating handle of the register is operated the screen will be moved back to first position and engaged by the latch, and held in such position until the indicator is again moved, as will be readily understood.

Having thus fully described my invention, I claim—

1. In a cash register and indicator, the combination, with an indicator and register having independent operating handles, of an automatic screen moving at the operation of the indicating handle into position to hide the indicator, and at the operation of the registering handle into position to expose it, substantially as described.

2. In a cash register and indicator, the combination, with an indicator and register having independent operating handles, of an automatic screen moving at the operation of the indicator handle into position to hide the indicator, a latch for holding it in such position, and a trip for the latch actuated by the registering handle to release the screen and permit it to move into position to expose the indicator, substantially as described.

3. In a cash register and indicator, the combination, with an indicator, a register, a handle for setting them and a second handle for actuating the register, of an automatic screen moving at the operation of the setting handle into position to hide the indicator, and at the operation of the register-actuating handle into position to expose the indicator, substantially as described.

4. In a cash register and indicator, the combination, with an indicator, a register, a handle for setting them and a second handle for actuating the register, of an automatic screen moving at the operation of the setting handle into position to hide the indicator, a latch for holding it in such position, and a trip for the latch actuated by the register-actuating handle to release the screen and to permit it to move into position to expose the indicator, substantially as described.

5. In an indicating machine, the combination, with an indicator movable to different positions to expose its numbers to view, of a screen movable into position to alternately hide and expose the indicator, and a connection between the screen and indicator for

causing the indicator to move the screen into position to hide its numbers when the indicator is turned from its position of rest, substantially as described.

5 6. In an indicating machine, the combination, with an indicator movable to different positions to expose its numbers to view, of a screen movable into position to alternately
10 hide and expose the indicator, a connection between the screen and indicator for causing the latter to move the screen into position to
15 hide its numbers when turned from its position of rest, a latch for holding the screen in such position, and a trip for the latch, substantially as described.

7. In an indicating machine, the combination, with an indicator movable to different positions to expose its numbers to view and
20 having a toothed wheel turning with it, a screen movable into position to alternately hide and expose the indicator, and a lever interposed between the toothed wheel and screen
25 and co-operating therewith to move the screen into position to hide the indicator when the latter is turned from its position of rest, substantially as described.

8. In an indicating machine, the combination, with an indicator movable into different positions to expose its numbers to view and
30 having a toothed wheel turning with it, a screen movable into position to alternately hide and expose the indicator, a lever interposed between the toothed wheel and screen
35 and co-operating therewith to move the screen into position to hide the indicator when the latter is turned from its position of rest, a
40 latch for holding the screen in such position, and a trip for the latch, substantially as described.

9. In a cash register and indicator, the combination, with an indicator movable into different positions to expose its numbers to view,
45 and a register, of a screen movable to position to alternately hide and expose the indicator and tending to move automatically into
50 one position, a latch for holding it in the other position, and a trip for the latch moved by the actuation of the register, to release the screen, substantially as described.

10. In a cash register and indicator, the combination, with an indicator movable into different positions to expose its numbers to view,
55 and a register, of a screen movable to position to alternately hide and expose the indi-

cator and tending to move automatically into position to expose the indicator, a latch for
60 holding it in position to hide the indicator, and a trip for the latch actuated by the operation of the register, to release the screen and permit it to move into position to expose the indicator, substantially as described.

11. In a cash register and indicator, the combination, with an indicator movable to different positions to expose its numbers to view,
65 and a register, of a screen movable into position to alternately hide and expose the indicator, a connection between the screen and indicator for causing the latter to move the
70 screen into position to hide the indicator when the indicator is turned from its position of rest, and means for temporarily holding the screen in such position and releasing it at the operation of the register, to permit it to move
75 to position to expose the indicator to view, substantially as described.

12. In a cash register and indicator, the combination, with an indicator movable to different positions to expose its numbers to view,
80 and a register, of a screen movable into position to alternately hide and expose the indicator, a connection between the screen and indicator for causing the latter to move the
85 screen into position to hide the indicator when the indicator is turned from its position of rest, a latch for holding the screen in such position, and a trip for the latch actuated by the operation of the register, to release the screen
90 and permit it to move into position to expose the indicator, substantially as described.

13. In a cash indicator, the combination, with an indicator movable to different positions to expose its numbers to view, of an automatic screen normally tending to move into
95 position to expose the indicator, and means for moving it into position to hide the indicator as soon as the latter is turned from its position of rest, and releasing it after the indicator has been turned to the new indication, whereby the numbers upon the indicator are
100 hidden from view as they successively pass the indicating point while the indicator is being turned from one position to another, substantially as described.

LEO EHRLICH.

Witnesses:

VIRGIL M. HARRIS,

W. PALMER CLARKSON.